(No Model.)

L. BOUDREAUX.

VALVE ATTACHMENT FOR STEAM CYLINDERS.

No. 362,418. Patented May 3, 1887.

FIG. 2.

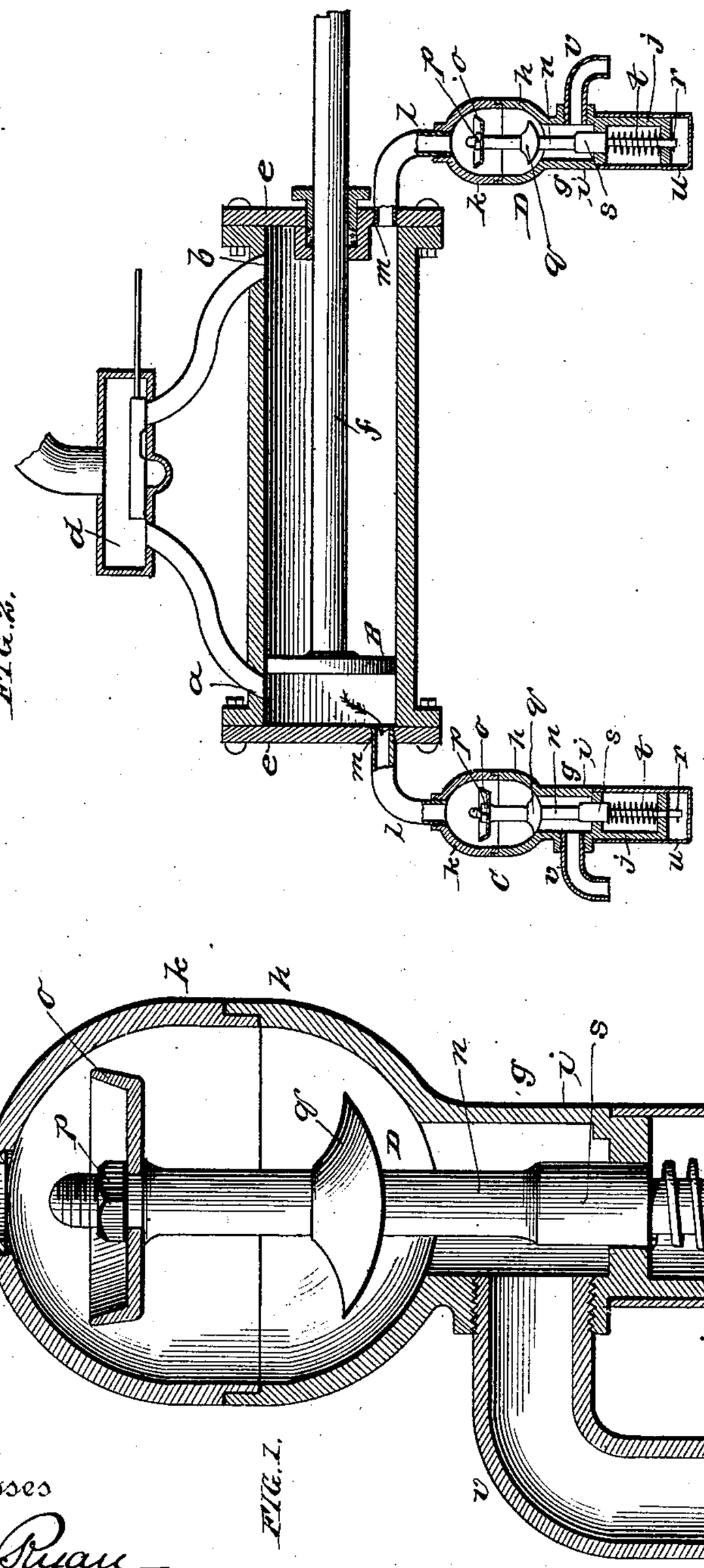

FIG. 3.

Witnesses

Jos. A. Ryan

E. L. Siggers

Inventor

Leandre Boudreaux

By his Attorneys

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

LEANDRE BOUDREAUX, OF THIBODEAUX, LOUISIANA, ASSIGNOR OF ONE-HALF TO JOHN J. GORMAN, OF SAME PLACE.

VALVE ATTACHMENT FOR STEAM-CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 362,418, dated May 3, 1887.

Application filed February 7, 1887. Serial No. 226,833. (No model.)

To all whom it may concern:

Be it known that I, LEANDRE BOUDREAUX, a citizen of the United States, residing at Thibodeaux, in the parish of La Fourche and State of Louisiana, have invented a new and useful Improvement in Valve Attachments for Steam-Cylinders, of which the following is a specification.

My invention relates to valve attachments for steam-cylinders; and it consists in the improved device hereinafter described, whereby a simple and efficient attachment is provided that may be readily attached to a steam-cylinder and serve to automatically exhaust from the same the water and steam of condensation.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical sectional elevation of my improved attachment, and Fig. 2 is a longitudinal sectional view of a steam-cylinder and piston provided with my improvements.

A refers to the steam-cylinder, which is provided at its respective ends with inlet-ports *a b*, the steam-supply to which is controlled by means of the usual slide-valve, adapted to be reciprocated on its valve-chamber *d* in the usual manner. In or adjacent to the lower portion of each head *e* of the cylinder is formed a threaded opening, for a purpose to be presently explained.

B indicates the piston within the cylinder A, adapted to be reciprocated therein by the rod *f*, playing through one of the heads, as shown.

C D refer to a pair of my attachments combined with the cylinder A. Each of said attachments consists of a lower section, constituting a body or stock, *g*, the upper portion, *h*, of which is enlarged to present in form a semi-cylindrical cup. The balance of the stock or body consists of a neck, *i*, and a cylindrical stem, *j*, depending therefrom, which is closed at its lower end.

The upper section of the attachment consists of a semi-cylindrical cup portion, *k*, which is inverted to constitute a cap for the cup *h*. A curved pipe, *l*, extends from the top of the cup portion *k*, and is threaded at its end *m*, to engage the threaded opening in the adjacent head *e*, and thereby forming a communication between the cylinder and the spherical chamber formed by the cup-sections *h* and *k*.

A spindle, *n*, is located vertically in the stock *g*, and extends up into the spherical chamber. Said spindle is threaded at its upper end, to permit a horizontal disk, *o*, to be placed thereon and be secured by a nut, *p*, while a valve, *q*, is secured on the spindle below the disk, and has its lower face curved to conform to the curved seat presented by the interior curved portions of the cup *h* adjacent to the neck *i*. The lower end of the spindle extends through and slightly beyond the end of the stem *j*, and is secured against withdrawal by means of a key, *r*, which passes transversely through the projecting end of the said spindle. The spindle is further provided with an enlargement or shoulder, *s*, against which bears one end of a coiled spring, *t*, which embraces said spindle and has its lower end bearing against the inner face of the end of the stem. The tendency of the spring is normally to throw the valve *q* away from its seat, as shown in Fig. 2 and by D in Fig. 1. The stem of the stock is cut away at one side, which provides an opening for access to enable sedimentary accumulations to be removed from the stem. The latter is covered by means of a cap or casing, *u*, which embraces said stem, as shown.

In operation, assuming the piston and its valve to be in the position shown in Fig. 1, steam is admitted through the port *a*, and by its pressure on the disk *o* forces the valve *q* to its seat in the attachment C, thus closing the latter. The continued expansion of the steam drives the piston to the other end of the cylinder A. Upon the return of the piston the diminished pressure of the steam consequent upon its partly-condensed condition enables the spring of the attachment C to raise its valve from its seat, so that the water and steam of condensation can be readily and effectively discharged therethrough.

It will be understood that the operation described takes place on both sides of the piston.

The discharge provided for the attachment may be of any desired character. In the ac-

companying drawings I have represented a simple discharge-nozzle, *v*, which leads from the neck of the attachment.

By constructing the valve-chamber in two independent sections access may be readily had to said chamber to clean the same, and also for the removal and adjustment of the valve and disk.

I claim—

1. An attachment for steam cylinders, the same consisting of a valve-chamber having a valve-seat and a discharge below the same, a spindle having a limited vertical movement in the attachment, a valve on said spindle, and a spring for throwing said valve from its seat, the attachment being cut away on one side, below the discharge, for the removal of sediment, substantially as set forth.

2. In an attachment for steam-cylinders, a valve-chamber having a valve-seat and discharge below the same, a spindle having a limited vertical movement in said attachment, a valve on said spindle, and a spring located in the lower part of said attachment and adapted to throw the valve away from its seat, said attachment being cut away adjacent to said spring, and a cap or case for embracing the lower portion of the attachment to close or cover the cut-away portion of the same, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LEANDRE BOUDREAUX.

Witnesses:
THEO. P. BERGERON,
C. A. ENGEMAN.